Amendments to the Claims

Please amend claims 1 and 3 and add new claims 4-48. This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A DSL transceiver comprising:

a receive section that receives a DSL signal from a DSL channel when the DSL transceiver is connected;

a transmit section that transmits ~~a~~ the DSL signal ~~form~~ to the ~~a~~ DSL channel when the DSL transceiver is connected;

a ~~DSL traffic detector~~controller that detects whether or not the DSL transceiver has neither received nor transmitted non-idle data ~~is being transmitted~~ over the DSL channel for a first predetermined period of time ; and

a selective processing subsection of the receive section that omits at least some of the processing ~~required~~ for reception of non-idle data from the DSL channel when the ~~DSL traffic detector~~ controller detects that the DSL transceiver has neither received nor transmitted non-idle data ~~is not being transmitted~~ over the DSL channel for the first predetermined period of time.

2. (Original) The DSL transceiver of claim 1, wherein the DSL transceiver is a host-signal processing based DSL transceiver.

3. (Currently Amended) The DSL transceiver of claim 1, further comprising state logic to place the selective processing subsection into a normal state, a sleep state or a warmup state, wherein the warmup state is entered after exiting the sleep

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state before entering the normal state and wherein in the warmup state the DSL transceiver resumes a subset, but not all, of the processing omitted.

4. (New) The DSL transceiver of claim 1, wherein the controller further determines to resume operation of the omitted processing in response to the controller determining that the DSL transceiver has omitted processing for a second predetermined period of time.

5. (New) The DSL transceiver of claim 4, wherein the controller comprises a state logic that, in response to the controller determining to resume operation of the omitted processing, places the selective processing subsection into a state in which the subsection resumes operation of some, but not all, of the omitted processing before transitioning to a state where the subsection resumes operation of all of the omitted processing.

6. (New) The DSL transceiver of claim 4, wherein after the selective processing subsection resumes operation of all of the omitted processing, the controller determines to again place the subsection in the state in which the subsection omits at least some of the processing, in response to the controller determining that the DSL transceiver has not received non-idle data for a third predetermined period of time.

7. (New) The DSL transceiver of claim 1, wherein the controller detects whether or not the DSL transceiver has neither received nor transmitted non-idle data over the DSL channel by determining whether non-idle data are received at an ATM protocol layer.

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8. (New) The DSL transceiver of claim 1, wherein the controller detects whether or not the DSL transceiver has neither received nor transmitted non-idle data over the DSL channel by monitoring IP packet traffic at an IP-ATM interface.

9. (New) A method for use in a DSL communications system comprising:

receiving a DSL signal from a DSL channel;

transmitting a DSL signal to a DSL channel;

processing data in the received DSL signal;

detecting the reception of idle data over the DSL channel for a first predetermined period of time; and

omitting at least some of the processing of the data in the received DSL signal in response to detecting the reception of idle data over the DSL channel for the first predetermined period of time.

10. (New) The method of claim 9, wherein the DSL communications system is a host-signal processing based DSL transceiver.

11. (New) The method of claim 9, further comprising:

placing the DSL communications system into a sleep state in response to the detecting of idle data received over the DSL channel for the first period of time;

placing the DSL communications system into a warmup state after exiting the sleep state, wherein in the warmup state the DSL communications system resumes a subset, but not all, of the omitted processing; and

placing the DSL communications system into a normal state after exiting the warmup state.

12. (New) The method of claim 9, further comprising:

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determining that the omitted processing has been omitted for a second predetermined period of time; and

determining to resume operation of the omitted processing in response to the determining that the omitted processing has been omitted for second predetermined period of time.

13. (New) The method of claim 12, further comprising:

entering, in response to determining to resume operation of the omitted processing, a state in which the DSL communications system resumes operation of some, but not all, of the omitted processing before transitioning to a state wherein all of the omitted processing is resumed.

14. (New) The method of claim 13, further comprising:

detecting the reception of idle data for a third predetermined period of time after resuming operation of the omitted processing; and

determining to again omit at least some of the processing in response to detecting the reception of idle data for a third period of time.

15. (New) The method claim 9, wherein the step of detecting the reception of idle data over the DSL channel for the first predetermined period of time comprises detecting whether non-idle data are received at an ATM protocol layer.

16. (New) The method of claim 9, wherein the step of detecting the reception of idle data over the DSL channel for the first predetermined period of time channel comprises monitoring IP packet traffic at an IP-ATM interface.

17. (New) A system for DSL communications comprising:

means for receiving a DSL signal from a DSL channel;

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means for transmitting a DSL signal to a DSL channel;

means for processing data in the received DSL signal;

means for detecting the reception of idle data over the DSL channel for a first predetermined period of time; and

means for omitting at least some of the processing of the data in the received DSL signal in response to detecting the reception of idle data over the DSL channel for the first predetermined period of time.

18. (New) The system of claim 17, wherein the system is a host-signal processing based DSL transceiver.

19. (New) The system of claim 17, further comprising:

means for placing the DSL communications system into a sleep state in response to the detecting of idle data received over the DSL channel for the first period of time;

means for placing the DSL communications system into a warmup state after exiting the sleep state, wherein in the warmup state the system resumes a subset, but not all, of the omitted processing; and

means for placing the system into a normal state after exiting the warmup state.

20. (New) The system of claim 17, further comprising:

means for determining that the omitted processing has been omitted for a second predetermined period of time; and

means for determining to resume operation of the omitted processing in response to the determining that the omitted processing has been omitted for second predetermined period of time.

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21. (New) The system of claim 20, further comprising:

means for entering, in response to determining to resume operation of the omitted processing, a state in which the DSL communications system resumes operation of some, but not all, of the omitted processing before transitioning to a state wherein all of the omitted processing is resumed.

22. (New) The system of claim 21, further comprising:

means for detecting the reception of idle data for a third predetermined period of time after resuming operation of the omitted processing; and

means for determining to again omit at least some of the processing in response to detecting the reception of idle data for a third period of time.

23. (New) The system claim 17, wherein the means for detecting the reception of idle data over the DSL channel for the first predetermined period of time comprises means for detecting whether non-idle data are received at an ATM protocol layer.

24. (New) The system of claim 17, wherein the means for detecting the reception of idle data over the DSL channel for the first predetermined period of time channel comprises means for monitoring IP packet traffic at an IP-ATM interface.

25. (New) A system for DSL communication comprising:

a transmit section for transmitting a DSL signal to a DSL channel;

a receive section for receiving the DSL signal from the DSL channel;

a data traffic detector that detects whether or not there is data traffic over the DSL channel; and

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a mode selection subsection of the receive section that omits a plurality of processing for responding to the data traffic in response to the data traffic detector detecting that there is no data traffic over the DSL channel.

26. (New) The system of claim 25, wherein the mode selection subsection further resumes at least one of the omitted processing in response to the data traffic detector detecting that there is data traffic over the DSL channel.

27. (New) The system of claim 26, wherein the mode selection subsection further resumes only some of the omitted processing in response to the data traffic.

28. (New) The system of claim 26, wherein the mode selection subsection further resumes all of the omitted processing in response to the data traffic.

29. (New) The system of claim 25, wherein the mode selection subsection further resumes at least one of the omitted processing when the omitted processing have been omitted for an idle time period.

30. (New) The system of claim 29, wherein the mode selection subsection further resumes only some of the omitted processing when the omitted processing has been omitted for the idle time period.

31. (New) The system of claim 29, wherein the mode selection subsection further resumes all of the omitted processing when the omitted processing has been omitted for the idle time period.

32. (New) The system of claim 29, wherein the length of the idle time period is predetermined.

33. (New) The system of claim 32, wherein the length of the idle time period is ~~fixed.~~

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34. (New) The system of claim 29, wherein the length of the idle time period is changeable.

35. (New) The system of claim 25, wherein the data traffic detector detects non-idle data.

36. (New) The system of claim 25, wherein the data traffic detector detects Internet Protocol (IP) packets.

37. New) A DSL communication method comprising:

detecting whether or not there is data traffic over a DSL channel; and

omitting a plurality of processing for responding to the data traffic in response to no data traffic being detected over the DSL channel.

38. (New) The method of claim 37, wherein the method further comprises:

resuming at least one of the omitted processing in response to data traffic being detected over the DSL channel.

39. (New) The method of claim 38, wherein the method further comprises:

resuming only some of the omitted processing in response to data traffic being detected over the DSL channel.

40. (New) The method of claim 38, wherein the method further comprises:

resuming all of the omitted processing in response to data traffic being detected over the DSL channel.

41. (New) The method of claim 37, wherein the method further comprises:

resuming at least one of the omitted processing when the omitted processing has ~~been omitted for an idle time~~ period.

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42. (New) The method of claim 41, wherein the method further comprises: resuming only some of the omitted processing when the omitted processing has been omitted for the idle time period.

43. (New) The method of claim 41, wherein the method further comprises: resuming all of the omitted processing when the omitted processing has been omitted for the idle time period.

44. (New) The method of claim 41, wherein the length of the idle time period is predetermined.

45. (New) The method of claim 44, wherein the length of the idle time period is fixed.

46. (New) The method of claim 41, wherein the length of the idle time period is changeable.

47. (New) The method of claim 37, further comprising:

detecting non-idle data as the detected data traffic.

48. (New) The method of claim 37, further comprising:

detecting Internet Protocol (IP) packets as the detected data traffic.

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